

**SYSTEMS AND METHODS FOR HANDOVER BETWEEN SPACE BASED
AND TERRESTRIAL RADIOTERMINAL COMMUNICATIONS, AND FOR
MONITORING TERRESTRIALLY REUSED SATELLITE FREQUENCIES
AT A RADIOTERMINAL TO REDUCE POTENTIAL INTERFERENCE**

Abstract of the Disclosure

A satellite communications system includes a satellite that is configured to wirelessly communicate with radioterminals in a satellite coverage area over a satellite frequency band, and an ancillary terrestrial component that is configured to

5 wirelessly communicate with radioterminals in the satellite coverage area over at least some of the satellite frequency band, to thereby terrestrially reuse at least some of the satellite frequency band. Wireless communications with a radioterminal are handed over from the ancillary terrestrial component to the satellite if the radioterminal transmit power exceeds a threshold, and a received satellite signal quality exceeds a

10 threshold, even though the radioterminal is able to wirelessly communicate with the ancillary terrestrial component. Downlink wireless radiation that is received at the radioterminal from a satellite may be monitored to determine potential interference created by the uplink radiation of the radioterminal due to the terrestrial reuse of at least some of the satellite frequency band.